User's guide

Multiplexer
Adash 3600-MPX

Application:

- Eight inputs multiplexer unit of the Adash 3600 on-line monitoring system
- Extending the set with eight input measuring channels (AC or DC)

Characteristics:

- Connection up to 8 sensors of vibrations (AC version) or of process values (DC version)
- Built-in ICP power supply units to supply connected accelerometers
- Display measuring channel number, whose data are displayed on the MAIN unit just now
- Three operating modes
  - ALL cyclic display data of all set channels
  - USER display data of the selected channel
  - MAX display data of the channel with the highest vibrations
- User configuration of measuring channels via the Adash 3600 Setup program
- User definition up to four different measurements for each channel via the Adash 3600 Setup program
- Capability to connect up to 8 these modules to one Adash 3600 set

Ref: 07022003 KM

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Contents

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Terminal Board of the Adash 3600-MPX Module

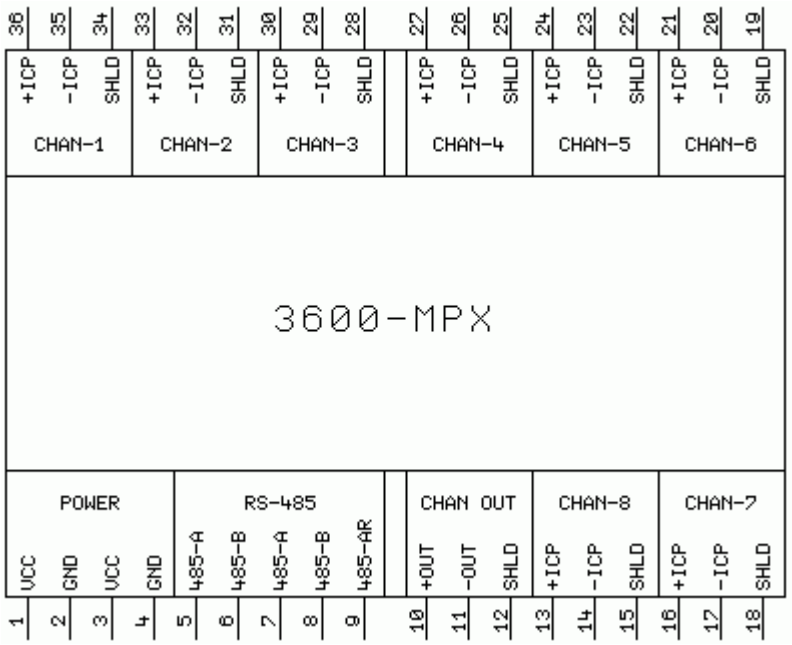

Fig. Terminal board of the Adash 3600-MPX module

The display of the terminal board corresponds to the front view of the module.

Description of Module Terminal Connectors

POWER supply voltage (terminal connectors with the same marking are interconnected inside):
VCC +5 V / max. 200 mA,
GND 0 V.

RS-485 communication connection for the Adash 3600 system (terminal connectors with the same marking are interconnected inside):
485-A signal A of RS-485,
485-B signal B of RS-485,
485-AR termination resistance 120R, for the termination of the interface to connect to terminal connector 485-B.

CHAN OUT output of the multiplexed signal:
+ OUT positive pole of the signal (without direct-current separation),
- OUT negative pole of the signal,
SHLD cable shield.

CHAN-1 .. CHAN-8 inputs of signals from sensors 1 to 8:
+ ICP positive pole of ICP supply and the signal,
- ICP negative pole of the supply and the signal,
SHLD sensor cable shield.

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Description of Adash 3600-MPX

The Adash 3600-MPX module serves to connect up to ***8 sensors with ICP supply*** to the Adash 3600-MAIN module. The original one-channel basic set Adash 3600 thus becomes multi-channel and enables ***cyclic measurement*** on all the mounted measurement channels, if extended with this module.
The maximum number of the Adash 3600-MPX extending modules to the Adash 3600 system is ***8***, therefore the basic Adash 3600 set can extended from one to a maximum of ***64*** measured channels.

Description of Module Control

On the front panel there are all the control and display elements of the Adash 3600-MPX module.

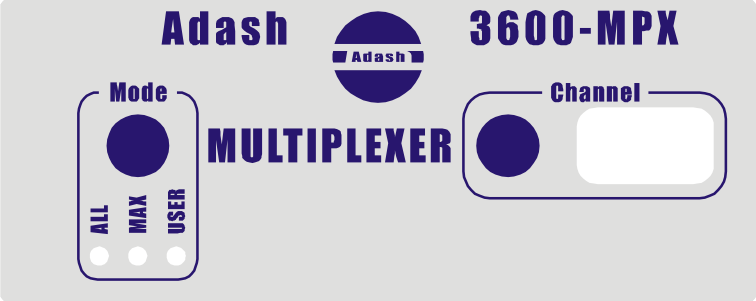

Fig. Front panel of the Adash 3600-MPX module

Mode Button

To select the mode of ***channel number display*** (at the Adash 3600-MPX module) and ***measured value display*** (at the Adash 3600-MAIN module). The selected mode is indicated by a green indicator located under the Mode button.

Selected mode	***Manner of display***
ALL	it displays cyclically the state of all the measured channels,
MAX	it displays the state of the channel with the highest vibrations in compliance with ISO,
USER	it displays continuously the state of the selected channel.

By keeping the Mode button pushed for approx. 3 seconds, the automatic channel switching during measurement is blocked and all the three indicators of the displayed mode on the front panel switch on. Use this option if an external analyser is connected to the Adash 3600 system. In this mode ***channels can be switched only by pushing the Channel button*** and the Adash 3600-MAIN module measures only the selected channel.
With the displayed channel number the decimal point is shown.

Channel Button

It enables to select ***the displayed*** (not measured) channel.

- If modes ***ALL*** or ***MAX*** are selected, ***values measured at the selected channel (vibration sensor) appear*** after pushing the Channel button at the Adash 3600-MAIN module for approx. 20 seconds.

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- If mode ***USER*** is selected, then the measured values at the selected channel ***remain displayed continuously***.

Immediately after pushing the Channel button, the ***decimal point*** switches on the indicator of the selected channel number and it remains on until the Adash 3600-MAIN module updates the measured values on its displays. As soon the valid values measured at the selected channel are displayed on the displays, the decimal point switches off.

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Extending the Set with the Adash 3600-MPX Module

The connection of the Adash 3600-MPX module to the Adash 3600 set is done according to the following schematic:

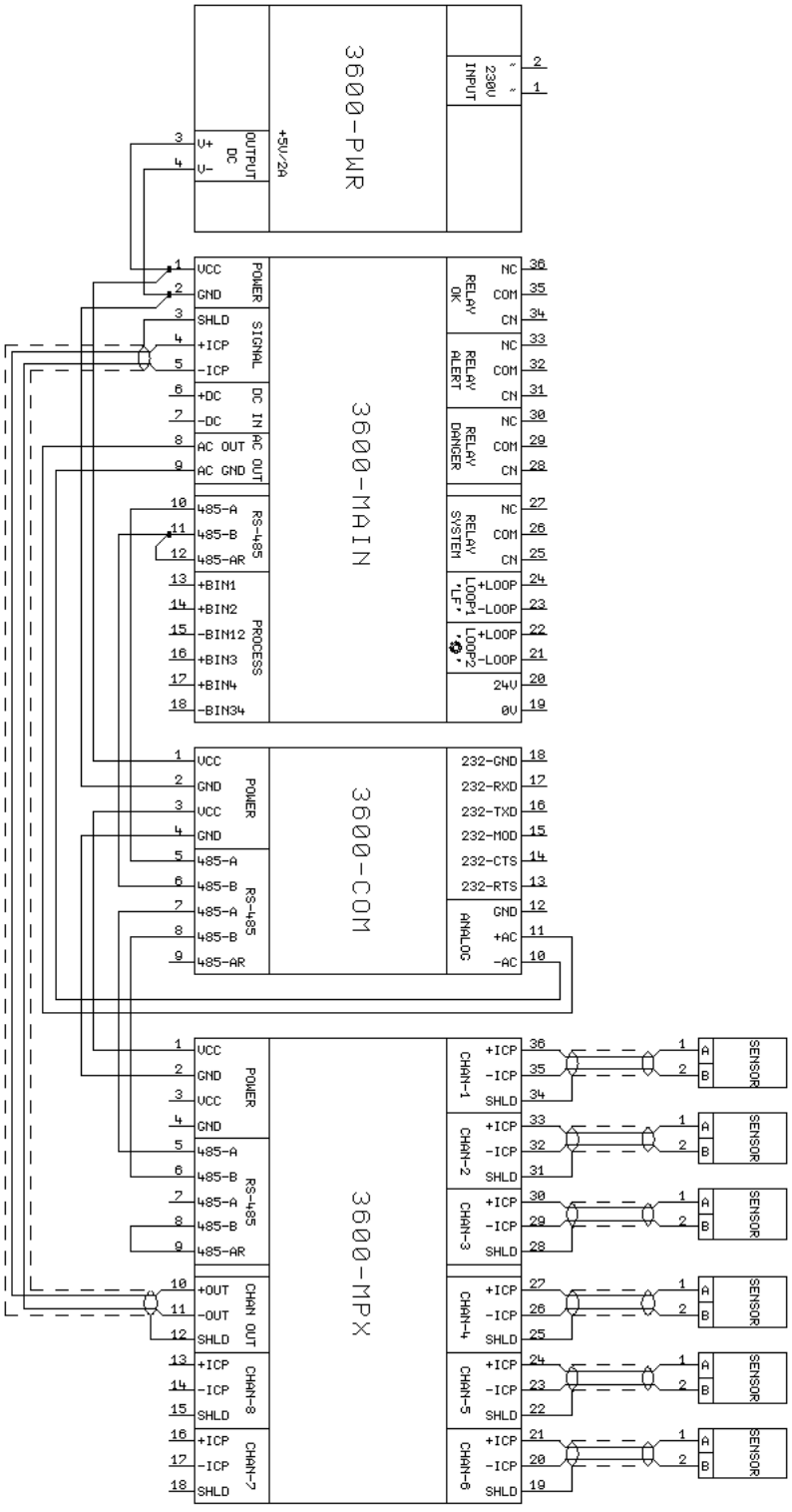

Fig. Schematic of connection of the 3600-MPX module to the Adash 3600 system

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The Set with a Number of Adash 3600-MPX Modules

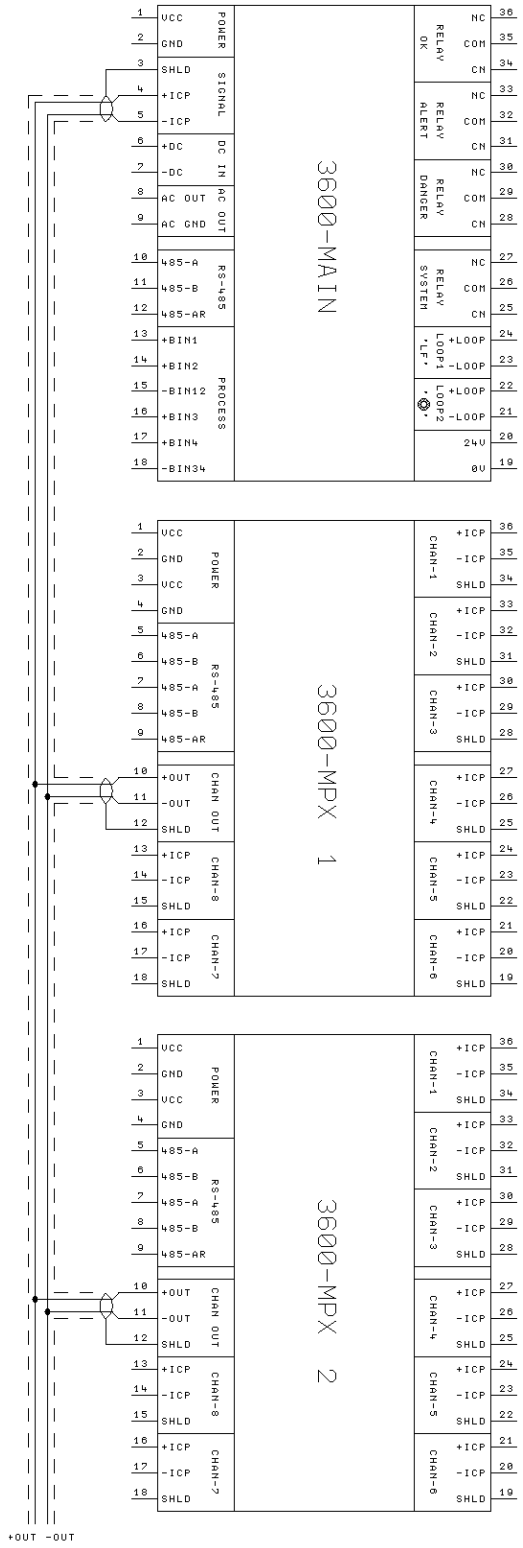

Fig. Interconnection of MPX output (OUT) terminal connectors

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Recommended Procedure of Module Connection

1. Disassembly of the terminal connector covers.

Remove the terminal connector covers of the modules by means of a suitable tool.

Fig. Removal of the terminal connector covers

2. Break the interconnection of terminal connectors 485-B and 485-AR at the set end module (3600-COM).

Fig. Interconnection at the end module 3600-COM

At the end module of the set (in this case 3600-COM) there is a resistance termination of RS-485 via an interconnection of terminal connectors 485-B and 485-AR. This interconnection must be removed and installed at the end module of the extended set (in this case 3600-MPX).

3. Interconnection of supply terminal connectors (VCC and GND).

The supply conductors are identified by the following colours in the supplied set:

- red, positive pole of the supply (+5 V, VCC)
- blue, negative pole of the supply (GND).

Pay attention to the correct polarity of the supply voltage! The positive voltage is always at the first terminal connector on the left.

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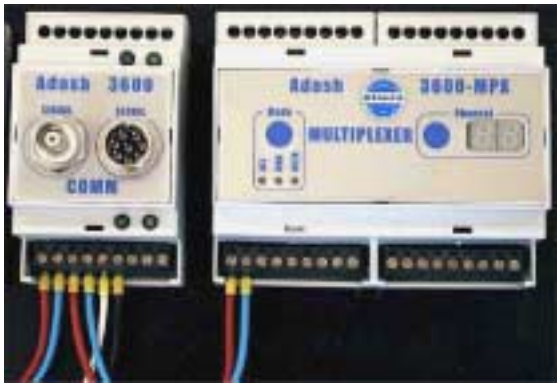

Fig. Interconnection of supply conductors

4. Connection of communication terminal connectors (485-A a 485-B) and interconnection (485-B, 485-AR) of the 3600-MPX module.

Fig. Interconnection of communication conductors

Fig. Interconnection position

The communication conductors are identified by the following colours in the supplied set:

- white conductor, signal A of RS-485
- black conductor, signal B of RS-485.

5. Connection of terminal connectors of the output signal from the Adash 3600-MPX module (+OUT, -OUT) to the input terminal connectors of the Adash 3600-MAIN module (+ICP, -ICP) ***via a shielded conductor***.

The shield is connected to the SHLD terminal connectors of both the modules.
The interconnection of the terminal connectors is as follows: +OUT to +ICP and –OUT to –ICP.
Pay attention to the correct connection! In the event of a reverse connection of the OUT and ICP terminal connectors, the Adash 3600-MAIN module will detect a vibration sensor error (ICP ERR).

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Fig. Interconnection of signal terminal connectors of the 3600-MAIN and 3600-MPX modules

6. Connection of vibration sensors.

To connect vibration sensors with ICP supply to the Adash 3600 set, a special shielded twisted cable is supplied, which is marked and connected as follows:

Conductor colour	**Sensor terminal connector**	**Module terminal connector**
Shielding (braiding)	-	SHLD
White	A	+ICP
White / blue (black)	B	- ICP

Channel 1

Fig. Connection of channel 1

1 2 3 4 5 6

Fig. Connection of channels 1 - 6

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The channels for vibration measurement are numbered 1 - 8 at the Adash 3600-MPX module.
The signals of channel 1 are led to the upper left terminal connectors, other channels gradually continue on the right up to the channel number 6.
The signals of channels 7 and 8 are led to the lower right terminal connectors (channel 7 is at the end).
Each channel occupies 3 terminal connectors at the terminal board, which are, for all the channels, in the following order, starting from the left: +ICP, -ICP, SHLD.

Fig. Connection of channels 7 and 8

7. Replace the terminal connector covers.

The extension of the Adash 3600 set with the 3600-MPX module is completed and the system is ready for measurement.

NOTICE.

Each module of Adash 3600 system has individual unique internal address on RS-485 - see User's guide Vibration Monitoring System Adash 3600 (3600main-com-pwr_man_en.pdf - List of Module Numbers on Interface RS-485 chapter). Each supplied system is pre-configured by producer.
- If you work with several systems, do not change individual modules between systems without check of each address (via Adash 3600 Setup software).
- Regarding repairs and upgrades contact your supplier for correct order information. Then you will receive each module configured correctly.

If you do not respect this rules, then communication conflicts appears and the system will not work.

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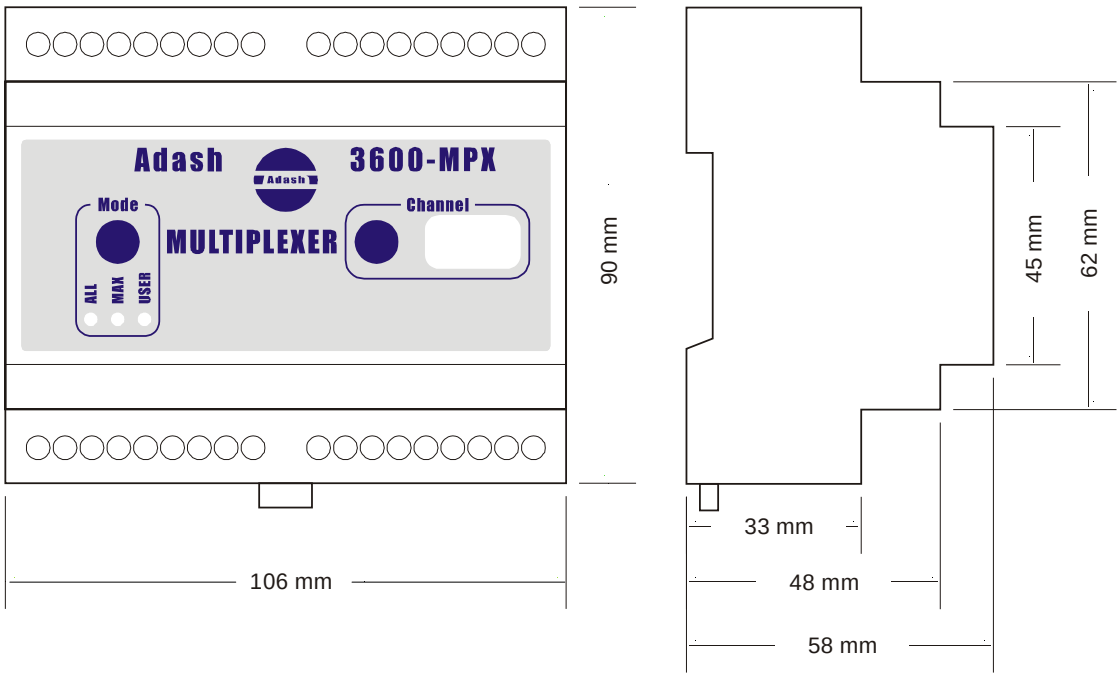
Technical Specification of Adash 3600-MPX

Inputs:	- 8x vibration sensors with continuous ICP supply
Output:	- 1 analogue, signal output from the selected vibration sensor
Interface:	- RS-485 for the communication between the Adash 3600 set modules
Control:	- by the main unit of Adash 3600-MAIN - selection of the mode and channel by means of the buttons on the front module panel
Unit setting:	- using the 3600 Setup program via communication unit Adash 3600-COM or Adash 3600-NET
Protection:	- IP20
Temperature range:	- -10 °C to +50 °C
Supply:	- +5 V / 200 mA
Dimensions:	- 106 x 90 x 58 mm
Weight:	- 210 g
Installation:	- DIN rail

Dimensioned Sketch of Adash 3600-MPX



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